

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte LUIGI RESCONI,  
FABRIZIO PIEMONTESE,  
and  
DAVIDE BALBONI

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Appeal No. 1999-0905  
Application No. 08/504,319

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ON BRIEF

Before OWENS, LIEBERMAN, and TIMM, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 2 through 13 and 15, which are all the claims pending in this application.

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### THE INVENTION

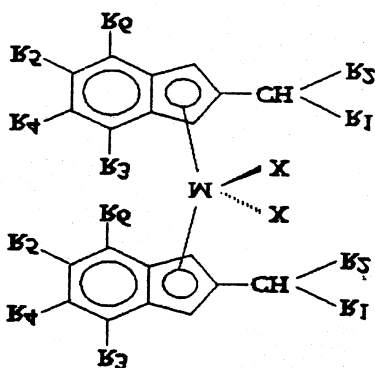
The invention is directed to a process for the preparation of substantially amorphous polymers of propylene by the utilization of specific metallocene compounds having alkyl groups attached thereto. The specific catalytic metallocene compounds and additional features of the claimed subject matter are set forth in the following illustrative claim.

### THE CLAIM

Claim 15 is illustrative of appellants' invention and is reproduced below:

15. A process for the preparation of substantially amorphous polymers of propylene having melting enthalpies ( $^{\circ}\text{H}_f$ ) that are not measurable by differential scanning calorimetry, said process comprising polymerizing propylene and optionally one or more olefins to obtain a homopolymer of propylene or a copolymer of propylene with at least 90% by mole of propylene units, said polymerization being carried out in the presence of a catalyst comprising the product of the reaction between:

- (A) a metallocene compound selected from the group consisting of bis-indenyl compounds of formula (I):



and the corresponding bis-4,5,6,7-tetrahydroindenyl compounds,  
wherein:

on each indenyl or tetrahydroindenyl group the substituents  $R^1$  and  $R^2$ ,  
same or different from each other, are hydrogen atoms,  $-\text{CHR}_2$   
groups, or  $-\text{CHR}-$  groups that form a cycle comprising from 3 to 8  
carbon atoms, wherein the R substituents are hydrogen atoms,  $\text{C}_1\text{-C}_{20}$   
alkyl radicals,  $\text{C}_3\text{-C}_{20}$  cycloalkyl radicals,  $\text{C}_2\text{-C}_{20}$  alkenyl radicals,  $\text{C}_6\text{-}$   
 $\text{C}_{20}$  aryl radicals,  $\text{C}_7\text{-C}_{20}$  alkaryl radicals or  $\text{C}_7\text{-C}_{20}$  aralkyl radicals  
and can contain Si or  
Ge atoms;

the substituents  $R^3$ ,  $R^4$ ,  $R^5$  and  $R^6$ , same or different from each other,  
are defined as R substituents, in addition two adjacent  $R^3$ ,  $R^4$ ,  $R^5$  and  $R^6$   
substituents on the same ring can form a ring comprising from 5 to 8  
carbon atoms;

M is a transition metal atom of groups IVb, Vb or VIb of the Periodic  
Table;

substituents X, same or different from each other, are hydrogen  
atoms, halogen atoms,  $-\text{R}^7$ ,  $-\text{OR}^7$ ,  $-\text{SR}^7$ ,  $-\text{NR}^7_2$  or  $-\text{PR}^7_2$  groups where  
substituent  $\text{R}^7$  are defined as substituent R; and

- (B) at least a compound selected from the group consisting of (a) organo-  
metallic compounds of aluminum containing at least a heteroatom  
selected from the group consisting of oxygen, nitrogen and sulphur,  
and (b) compounds capable of reacting with the metallocene  
compound to form an alkyl metallocene cation.

#### THE REFERENCE OF RECORD

As evidence of obviousness, the examiner relies upon the following reference:

Waymouth et al. (Waymouth)	5,594,080	Jan. 14, 1997
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### THE REJECTION

Claims 2 through 13 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Waymouth.

### OPINION

We have carefully considered all of the arguments advanced by the appellants and the examiner, and agree with the appellants that the rejection of the claims under § 103(a) is not well founded. Accordingly, we reverse this rejection.

#### Rejection under 35 U.S.C. § 103(a)

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability," whether on the grounds of anticipation or obviousness. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). On the record before us, the examiner relies upon a reference to Waymouth to reject the claimed subject matter and establish a prima facie case of obviousness. The basic premise of the rejection is that it would have been obvious to one of ordinary skill in the art, "to arrive at appellants' claimed processes because such embodiments fall within the scope of the prior art disclosure." See Answer, page 5. We disagree with the examiner's conclusion.

We find that Waymouth is directed to a new class of metallocene catalysts and methods of polymerization utilizing the catalysts to produce a wide range of olefin

polymers including syndiotactic-atactic stereo block polymers. See column 2, lines 43-48. Specifically, the invention is directed to novel metallocene catalysts for producing stereo block polypropylene comprising alternating isotactic and atactic diastereoisomers. See column 3, lines 28-32. The preferred catalysts are prepared from 2-arylindene compounds having the formula in column 4, lines 45-56. Although the catalyst system disclosed by Waymouth very broadly encompasses the catalysts of the claimed subject matter, column 4, lines 8-43, the claimed subject matter before us is limited to a catalyst derived from a specific 2-alkylindene compound having the formula disclosed in the Brief on page 7. In contrast to the catalysts of Waymouth, each of which are disclosed as isomerizing on a time scale that is slower than the rate of olefin insertion but faster than the average time to construct a single polymer in order to obtain a block structure, column 8, lines 16-20, the claimed subject matter is directed to, "substantially amorphous polymers of propylene." Furthermore, the examiner has not established that the utilization of alkyl groups in place of the phenyl groups, i.e., 2-alkylindene derivatives in place of 2-arylindene derivatives would necessarily result in an amorphous, atactic polypropylene. Therefore, the examiner has not met his burden of establishing a prima facie case of obviousness.

Based upon the above analysis, we have determined that the examiner's legal conclusion of anticipation and obviousness is not supported by the facts. "Where the legal conclusion is not supported by [the] facts[,], it cannot stand." In re Warner, 379

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F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

The rejection of claims 2 through 13 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Waymouth is reversed.

REVERSED

PL:hh



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